REMARKS

Applicant has cancelled claims 5, 6 and 10, amended claims 1, 2 and 4, and added new claims 11-15. Claims 1-4, 7-9, and 11-15 are pending in this application.

In the Office Action, the Examiner has withdrawn claims 5-10 from consideration as being drawn to non-elected subject matter. Applicant notes that claims 7-8 and 9 (Group II and III, respectively) are linked to the pending claims by linking claim 1. Accordingly, upon the allowance of the linking claim, the restriction requirement as to the linked invention is to be withdrawn and any claims depending from or otherwise including all the limitations of the allowable linking claim will be entitled to examination along with claims 1-4.

The Examiner rejected claim 1 under 35 U.S.C. §112, second paragraph, as being indefinite for reciting the broad recitation of object light while the claim also recites reflection, fluorescence, which is the narrow statement of the range. In response, applicant has amended the claim and removed the recitation of "reflection, fluorescence".

The Examiner rejected claims 1-4 under 35 U.S.C. §103(a) as being obvious over Uhl (U.S. Patent No. 5,751,417). Although applicant has amended claim 1, applicant traverses the rejection to the extent that it applies to the amended claims.

The present invention as claimed in claim 1 concerns use of a switchable mirror array to control selection of certain wavelengths in a microscope. As an example, Figure 3A illustrates an arrangement where the mirror array is used in both the illumination path and the detection path (see Specification page 8, lines 26-28). As another example, Figure 2 illustrates an arrangement where the mirror array (DMD) is used in only the detection path. As shown Figure 2, the detection beam coming through the pinhole PH1 is spatially dispersed by a dispersion element GT1 and hits the mirror array DMD. The mirror array DMD then selects certain wavelengths from the spatially dispersed wavelengths. The selected wavelengths which have been spatially separated by the dispersion element DT1 are then received by a detector DT3. (See Specification at page 7, lines 15-30).

Accordingly, all independent claims have a common feature that those wavelengths that have been selected by the mirror array are received by a detector **as dispersed by a dispersion element** without the selected wavelengths being recombined (emphasis added). This feature provides the advantage that the selected wavelengths can be simultaneously detected by a detector array for accurate and faster imaging. Claim 1 recites this feature as

"wherein the selected wavelengths that have been dispersively divided are received by a detector". Claim 2 recites the feature as "wherein a detector receives the selected wavelengths as dispersed by the dispersion element".

By contrast, the Uhl reference teaches that the selected wavelengths dispersed by a dispersion element 28 are recombined by a negative dispersion element 34 before it reaches a detector 38 (element 36 at the lower left portion of Figure 1 should be apparently labeled as 38) (See Column 6, lines 12-19). Such multiple use of dispersion elements has the disadvantage of being very inefficient, especially for fluorescence observation. Uhl neither teaches nor suggests routing dispersed wavelengths to a detector without recombining the wavelengths.

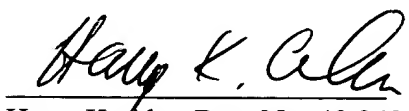
Applicant has added new claims 11-15. Similar to the pending claims, claims 11-15 are drawn to a microscope including a mirror array arrangement and a dispersion element, and are believed to be directed to Group I.

Independent claim 11 recites "a detector operable to receive the focused wavelengths that have been selected by the switchable mirror arrangement and spatially dispersed by the dispersion element." Independent claim 13 recites "the detector receiving the selected wavelengths as dispersed by the dispersion element." For the similar reasons as discussed above with respect to claim 1, applicant submits that independent claims 11 and 13 are also patentable.

Dependent claims 3-4, 12 and 14-15 are also patentable by virtue their dependency from their parent claims.

Based upon the above amendments and remarks, applicants respectfully request reconsideration of this application and its early allowance. Should the Examiner feel that a telephone conference with applicants' attorney would expedite prosecution of this application, the Examiner is urged to contact him at the number indicated below.

Respectfully submitted,



Harry K. Ahn, Reg. No. 40,243
Reed Smith LLP
375 Park Avenue
New York, NY 10152
Tel. (212) 521-5400

MARKED-UP CLAIMS

Please cancel claims 5, 6 and 10 without prejudice or disclaimer.

Please amend the claims as follows:

1. (Amended) A laser scanning microscope comprising:

at least one selectively switchable micro-mirror arrangement in [at least one of the illumination beam path and] a detection beam path which is used for the wavelength selection of [at least one of] dispersively divided [illumination and object light such as reflection, fluorescence] object light wherein the selected wavelengths that have been dispersively divided are received by a detector, the object light coming from the object under study.

2. (Amended) A combination comprising:

at least one micro-mirror arrangement with at least one dispersion element for wavelength-selective coupling in of illumination light in the direction of the object and wavelength-selective coupling out of object light in the direction of detection in a microscope, wherein a detector receives the selected wavelengths as dispersed by the dispersion element.

4. (Amended) An arrangement according to claim 1 further comprising at least one of a grating and prism as dispersion element.

Please add the following new claims.

-- 11. (New) A microscope arrangement with a switchable mirror array comprising:

a detector pinhole operable to receive a detection beam coming from a sample under study;

a dispersion element operable to spatially disperse the detection beam;

a switchable mirror arrangement operable to switch selected wavelengths of the

spatially dispersed detection beam;

a focusing element operable to focus the selected wavelengths; and

a detector operable to receive the focused wavelengths that have been selected by the switchable mirror arrangement and spatially dispersed by the dispersion element.

12. (New) The microscope arrangement according to claim 11 wherein the pinhole includes a second switchable mirror arrangement operable to adjust the size of the entrance aperture.

13. (New) A microscope arrangement with a switchable mirror array, comprising:

a light source operable to produce a laser light;

a dispersion element;

a switchable mirror array, the dispersion element and the switchable mirror array being disposed in the beam path of the laser light;

wherein:

the dispersion element and the switchable mirror array act together to couple in selected wavelengths of the laser light toward a sample under study; and

a detection beam coming from the sample is dispersed by the dispersion element and the switchable mirror array couples in selected wavelengths of the dispersed detection beam for receipt by a detector, the detector receiving the selected wavelengths as dispersed by the dispersion element.

14. (New) The microscope arrangement according to claim 13 wherein the dispersion element includes a fixed grating or a prism.

15. (New) The microscope arrangement according to claim 13, further comprising a pinhole adapted to receive the coupled in selected wavelengths of the laser light. --